REMARKS

With the above amendments, claims 1-21 remain in the application. Claims 1, 10, 11, 19, and 21 have been amended. No new matter is being added.

Claim Objections

Claims 10, 19 and 21 stand objected to based on an informality. These claims are hereby amended in accordance with the Examiner's comments so as to correct the informality. As such, applicants respectfully submit that this objection is now overcome.

Claim Rejections 35 U.S.C. § 102

Claims 1-7, 9-17 and 19-21 stand rejected as anticipated by Swanberg et al. Applicants respectfully traverse this rejection with respect to the claims as hereby amended.

Claim 1 is hereby amended to clarify the meaning of the kernel stack and now recites as follows.

> 1.   A memory system for a computer, the memory system comprising a single memory page including a kernel stack and a register stack engine (RSE) stack, wherein **the kernel stack is separate and distinct from user program stacks in the memory system**.
>
> (Emphasis added.)

The above-recited separation and distinctiveness between the kernel stack and user program stacks is supported in the original specification. For example, as recited on page 7, lines 9-11, **"It is highly desirable, in fact, for the kernel to use different stacks from user processes to prevent user processes from interfering with kernel processes."**

In contrast, the "program stacks" ("memory stacks") **402** in FIGS. 4A and 4B of Swanberg et al. relate to **user program stacks**, not the kernel stack. For example, as recited on column 1, lines 45-46 of Swanberg et al., **"the program stack is used by the compiler for procedural local data"**. Procedural local data refers to data which is local to a procedure in a user program.

Therefore, Swanberg et al. does not disclose or suggest the claimed invention. As such, applicants respectfully submit that claim 1, as amended, is now patentably distinguished over the cited art.

Claims 2-7 and 9-10 depend from claim 1. As such, applicants respectfully submit that claims 2-7 and 9-10 are now also patentably distinguished over the cited art for at least the reasons discussed above in relation to claim 1.

Furthermore, in regards to claim 3, applicants respectfully submit that the inclusion of the "uarea" data structure further distinguishes claim 3 over the cited art. As discussed in the specification of the present application, the uarea (sometimes called "ublock") data structure pertains to a specific data structure that "includes system information about a user process." (Page 8, lines 5-7.) The uarea data structure is distinct and separate from the various stacks.

In contrast, the two stack regions **405** and **406** in FIG. 4B of Swanberg et al. merely denote the initially filled regions of the register stacks **403** and memory stacks **402**, respectively. Hence, the two stack regions **405** and **406** cannot correspond to the "uarea" data structure as required by claim 3.

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Similarly, claim 11 is hereby amended to clarify the meaning of the kernel stack and now recites as follows.

> 11. A computer system comprising:
>> a microprocessor including a register stack and a register stack engine (RSE);
>> an operating system including a kernel; and
>> a memory system configured to have a single memory page that includes both a kernel stack and an RSE stack,
>> wherein **the kernel stack is separate and distinct from user program stacks in the memory system.**

(Emphasis added.)

The above-recited separation and distinctiveness between the kernel stack and user program stacks is supported in the original specification. For example, as recited on page 7, lines 9-11, "**It is highly desirable, in fact, for the kernel to use different stacks from user processes to prevent user processes from interfering with kernel processes.**"

In contrast, the "program stacks" ("memory stacks") **402** in FIGS. 4A and 4B of Swanberg et al. relate to **user program stacks**, not the kernel stack. For example, as recited on column 1, lines 45-46 of Swanberg et al., "**the program stack is used by the compiler for procedural local data**". Procedural local data refers to data which is local to a procedure in a user program.

Therefore, Swanberg et al. does not disclose or suggest the claimed invention. As such, applicants respectfully submit that claim 11, as amended, is now patentably distinguished over the cited art.

Claims 12-17 and 19-20 depend from claim 11. As such, applicants respectfully submit that claims 12-17 and 19-20 are now also patentably distinguished over the cited art for at least the reasons discussed above in relation to claim 11.

Furthermore, in regards to claim 13, applicants respectfully submit that the inclusion of the "uarea" data structure further distinguishes claim 3 over the cited art. As discussed in the specification of the present application, the uarea (sometimes called "ublock") data structure pertains to a specific data structure that "includes system information about a user process." (Page 8, lines 5-7.) The uarea data structure is distinct and separate from the various stacks.

In contrast, the two stack regions **405** and **406** in FIG. 4B of Swanberg et al. merely denote the initially filled regions of the register stacks **403** and memory stacks **402**, respectively. Hence, the two stack regions **405** and **406** cannot correspond to the "uarea" data structure as required by claim 13.

Similarly, claim 21 is hereby amended to clarify the meaning of the kernel stack and now recites as follows.

> 21. A method of a process entering a kernel of an operating system configured for an Itanium Processor Family processor architecture, the method comprising:
> accessing a kernel stack within a memory page;
> accessing an RSE stack within the same memory page; and
> accessing a uarea data structure within the same memory page,
> wherein **the kernel stack is separate and distinct from user program stacks**.

(Emphasis added.)

The above-recited separation and distinctiveness between the kernel stack and user program stacks is supported in the original specification. For example, as recited on page 7, lines 9-11, "**It is highly desirable, in fact, for the kernel to use different stacks from user processes to prevent user processes from interfering with kernel processes.**"

In contrast, the "program stacks" ("memory stacks") **402** in FIGS. 4A and 4B of Swanberg et al. relate to **user program stacks**, not the kernel stack. For example, as recited on column 1, lines 45-46 of Swanberg et al., "**the program stack is used by the compiler for procedural local data**". Procedural local data refers to data which is local to a procedure in a user program.

Therefore, Swanberg et al. does not disclose or suggest the claimed invention. As such, applicants respectfully submit that claim 21, as amended, is now patentably distinguished over the cited art.

Claim Rejection 35 U.S.C. § 103

Claims 8 and 18 stand rejected as unpatentable over Swanberg et al. in view of Draves et al. Applicants respectfully traverse this rejection with respect to the claims as hereby amended.

Claims 8 depends from claim 1. Neither Swanberg et al. nor Draves et al. disclose the limitations of claim 1. As such, applicants respectfully submit that claim 8 is now patentably distinguished over the cited art for at least the reasons discussed above in relation to claim 1.

Claims 18 depends from claim 11. Neither Swanberg et al. nor Draves et al. disclose the limitations of claim 11. As such, applicants respectfully submit that claim 18 is now patentably distinguished over the cited art for at least the reasons discussed above in relation to claim 11.
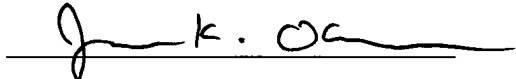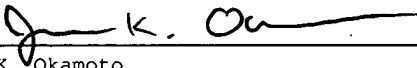
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Conclusion

For at least the above reasons, it is respectfully submitted that claims 1-21 are now patentably distinguished over the cited art. The Examiner is invited to telephone the undersigned at (408) 436-2111 for any questions.

If for any reason an insufficient fee has been paid, the Commissioner is hereby authorized to charge the insufficiency to Deposit Account No. 08-2025.

Respectfully submitted,
Christopher Philip Ruemmler, et al.

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